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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,134	06/26/2003	Jarmo Ilmari Maula	11429/13:1	6738

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EXAMINER

LEE, KEVIN L

ART UNIT PAPER NUMBER

3753

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/609,134

Applicant(s)

MAULA ET AL.

Examiner

KEVIN L LEE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-9,13,14,16-18,20-23,26 and 28 is/are rejected.
- 7) ☒ Claim(s) 3-5,10-12,15,19,24,25,27,29 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>November 17, 2003</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation of "means of generating suction according to claim 2" lacks antecedent basis.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6-8, 13, 17, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Weingarten (U.S. Patent No. 5,383,646). The patent to Weingarten discloses a diaphragm valve comprising a valve body (42, 20) defining a valve passage having an inlet and an outlet; a diaphragm (14) having first and second sides, wherein the first side is proximal to the first side; an enclosed space (26) adjacent the second side of the diaphragm and a vent passage (30) communicating with the enclosed space to vent the enclosed space. The valve includes means (32) operatively coupled to the

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vent passage (30) for reducing pressure in the enclosed space; col. 4, lines 21-68.

Figure 5 of the patent illustrates an actuator (142) for opening the valve. The diaphragm is made of elastomeric material; col. 3, line 46.

Claims 1, 6-8, 13, 14, 22, 23 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Moldenhauer (U.S. Patent No. 4,826,132). The patent to Moldenhauer discloses a diaphragm valve comprising a valve body (1) defining a valve passage having an inlet and an outlet; a diaphragm (10) having first and second sides, wherein the first side is proximal to the valve passage; and a vent passage (14a, 14c) communicating with an enclosed space (11) adjacent to the second side of the diaphragm; col. 4, line 62 thru col. 5, line 4.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moldenhauer in view of Goossens (U.S. Patent No. 6,659,421). The valve of Moldenhauer lacks being a normally spring-biased open valve, with the solenoid being energized to close the valve. The patent to Goossens teaches the above exception in

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providing a normally spring-biased open valve, with the solenoid valve being energized to close the valve; col. 5, lines 55-64. In view of the teaching of Goossens, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the valve of Moldenhauer to have the spring bias the valve normally to the open position and the solenoid energized to close the valve to provide a valve which is normally open to fluid flow.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weingarten in view of Butler (U.S. Patent No. 6,241,213). The diaphragm of Weingarten lacks being formed of a plastic material. Butler teaches that diaphragm valves can be either elastomeric or plastic; col. 1, lines 18-20. In view of the teaching of Butler, it would have been obvious to one of ordinary skill in the art to modify the valve of Weingarten to include forming the diaphragm of plastic as an alternate material for the diaphragm valve.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitt et al (U.S. Patent No. 6,179,925) in view of Moldenhauer. The patent to Schmitt et al discloses a precursor material delivery system including a precursor shutoff valve (136). The valve of Schmitt et al lacks being a diaphragm valve. The patent to Moldenhauer teaches a diaphragm valve. It would have been obvious to one of ordinary skill in the art to substitute the diaphragm valve of Moldenhauer for the valve of Schmitt et al to

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provide a solenoid controlled valve including a chemically resistant valve member as a part of the precursor material delivery system.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Wijck (U.S. Patent No. 6,585,823) in view of Moldenhauer. The patent to Van Wijck discloses an ALD system including a shutoff valve (51). The valve of Van Wijck lacks being a diaphragm valve. The patent to Moldenhauer teaches a diaphragm valve. It would have been obvious to one of ordinary skill in the art to substitute the diaphragm valve of Moldenhauer for the valve of Van Wijck to provide a solenoid-controlled valve including a chemically resistant valve member as a part of the ALD system.

***Allowable Subject Matter***

Claims 3-5, 10-12, 15, 19, 24, 25, 27, 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN L LEE whose telephone number is (571) 272-4915. The examiner can normally be reached on MONDAY-THURSDAY.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, GENE MANCENE can be reached on (571) 272-4930. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DECEMBER 17, 2004

  
Kevin Lee  
Primary Examiner